

South African Thysanoptera - 5.

by

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Suborder TUBULIFERA

Family PHLAEOTHRIPIDAE

Hoplandrothrips acaciae spec. nov. (Figs. 1—5)

Female (macropterous). Length (distended) about 1.9—2.0 mm. *Colour*: brown to light brown; eyes so deep red as to appear black; ocellar crescents deep red; mesonotum, tergite ix of abdomen and apical half of tube somewhat paler than rest of body; antennae: i and ii largely as brown as body, i above and ii towards apex somewhat paler, iii to viii largely grey to light brown, iii to v greyish yellow in basal one-fourth or one-fifth but the pale and darker areas merge into one another imperceptibly, pedicel of vi also paler than rest of segment, vii and viii rather uniformly grey; legs concolorous with body, except fore tibiae which are greyish yellow in about apical third or fourth, and all tarsi, which are greyish yellow with brown cups; fore-wings hyaline in apical half, with a very faint cloudiness; approximately one-fourth at base behind sub-basal setae similar to apical half, sometimes slightly more infuscate, this basal area merging imperceptibly with the second fourth, which is very pale grey and somewhat darker posteriorly, scale pale grey, darker than rest of wing but paler than antennal vii and viii; hind wings very feintly infuscate and with a median grey line in basal half; wing fringes grey; all major setae of body and appendages pale, very slightly greyish yellow, except the sigmoids on abdomen which are grey to light brown. Bright red internal pigmentation present in large blotches in head, thorax and abdomen of specimens mounted in balsam a few months after they were collected, but not visible in specimens that were kept in 70 % alcohol for about seven years before mounting.

Sculpturing not prominent, but readily visible, especially in specimens macerated in NaOH. Integument of all sclerotized parts minutely granulate. Head reticulate between the ocelli, and behind them as far as hind margins of eyes, rest of head dorsally, laterally and ventrally with rather closely set transverse striae which anastomose to form elongate reticles, there being about 20 lines between postoculars and hind margin, cheeks minutely serrate-tuberculate, the tubercles extending on to ventral surface between eyes and

base for about one-ninth of width of head on both sides; pronotum less distinctly sculptured than head over most of its surface, but with lines forming reticles between and behind pm. setae, and also in area bounded by pm., ml., aa. and am. setae and on epimera; mesonotum finely transversely striate-reticulate; median triangular area of metanotum reticulate, the reticles sub-hexagonal in front of the pair of setae and longitudinally elongate behind them, rest of metanotum smooth; mesosternum and metasternum smooth; lateral sclerites of pterothorax striate-reticulate; median plate of tergite i and whole of tergite ii reticulate; tergites iii to vii with transverse lines forming reticles on whole surface behind ante-costal line, on viii and ix these lines much weaker; laterad of sigmoids on ii to vii the lines are distinctly but minutely asperate; medially between ante-costal line and the pair of dorsal pores the surface is minutely roughened on tergites ii to viii, this rough area being more conspicuous on vi to viii than on ii to v; tergite ix minutely asperate in anterior half; tube with about six scalloped lines in basal third, rest feebly reticulate; sternites ii to vii practically smooth; sternite viii and lateral parts of sternite ix with transverse anastomosing lines, which are weaker on viii; all femora and tibiae, and the antennae with transverse anastomosing lines which are not shown on the drawings.

Head length measured on 24 ♀♀ varies from 190 to 257 μ with a complete intergradation between these extremes: in one case there is a difference of 15 μ between two head lengths in the series, in two cases there is a difference of 7 μ , and in all other cases 1 to 4 μ . The ratio L/W of the head is 1.0 to 1.2 in 3 ♀♀ measured. The head is 1.7—1.8 as long as the pronotum and 1.5—1.8 as long as the tube. The cheeks are gently rounded from the eyes to the base of the head, with a slight constriction just in front of the basal collar; the widest point is just behind the postoculars. The head is cylindrical. *Ocelli* borne on a prominent conical hump, the anterior situated above the inter-antennal projection, on or just in front of a line through the anterior margins of the eyes, the posterior pair so close to the eyes that they indent the inner margins of the eyes.

Eyes large, prominent, neither bulging nor indented at posterior margin, their edges forming almost continuous lines with the cheeks; eye length about 0.4 of the head length; dorsal and ventral eye lengths and widths are approximately equal; ommatidia closely packed together and approximately of the same size and shape in all parts. *Head setae*: postoculars large, expanded at apex, as long as the eyes or about 20 μ shorter, situated about 13 μ from the eyes and close to the lateral margins of the head; ante- and interocellars minute, up to about 6 μ long; about five pairs more or less in two rows behind posterior ocelli about 15 μ long, pointed; cheeks with about three or four pointed setae on small warts, the longest situated about one-third of cheek length from base and 6 to 11 μ in length; ventrally, in addition to the three pairs of setae listed in the paragraph "measurements" below, there are about twelve scattered pairs of pointed setae about as long as the post-ocellars.

Mouth-cone pointed at apex, extending about two-thirds across the prosternum; maxillary stylets extending to hind margins of eyes in retracted position thence running close together with an interval of about 15—20 μ near hind margin of head, without a maxillary bridge; labial palpi with a rather thick peg-like appendage, at apex of second segment, that may be a sense-organ, as well as one shorter and one longer seta.

Antennae as illustrated (fig. 2). Sense-cones well-developed, long, those on iii and iv about 25—30 μ long on the holotype; formula: iii, 1—2; iv, 2—2; v, 1—1 (+ 1); vi, 1—1 (+ 1); vii, 1d. On the figure only three of the cones on segment iv are shown, because the second one on the inner side is on the ventral aspect.

Pronotum 0.6 as long as the head; its length is 0.4 of the width of prothorax including coxae; the anterior margin is only feebly thickened internally and the median apodeme is only very weakly developed along its middle region in some females. All the major setae present and well developed, strongly expanded at the apex, fairly constant in length in the series before me; the posterior median marginals short, thin and pointed.

Mesonotum of holotype 71 μ long and 226 μ wide; the pair of large setae expanded at apex, situated about 9—13 μ from lateral extremity on hind margin; three pairs of pointed setae on hind margin 13—21 μ in length, *Metanotum* of holotype 190 μ long and 219 μ wide across middle; the pair of pointed setae about 42 μ from anterior margin and 72 μ apart. *Wings* present and fully developed on all specimens before me, the fore-wings distinctly narrowed at the middle: the ratio greatest width near base and near insertion of first cilia over least width near middle about 1.3—1.5., and the ratio width at first duplicated cilia over least width near middle about 1.3; the fore-wings with a distinct hump near the middle, roughly equal in width to one third of wing-width at middle, and elongate in shape; the sub-basal setae in a straight row, all strongly knobbed or expanded at apex; 8—12 duplicated cilia.

Legs: fore femora distinctly enlarged, but without teeth ventrally at apex; fore tibiae without teeth; fore tarsus with a prominent tooth at base; hind tibia with a strong seta (or spur) on outer posterior aspect at apex, about 42 μ long and 1 μ thick, its tip blunt to slightly knobbed, but transparent on one side, so that it can readily be taken to be pointed.

Abdomen: median plate of tergite i bell-shaped with prominent, broad, blunt or sharp points laterally at base, its sides deeply concave, its shape not very variable in the series before me; tergites ii to ix approximately equal in length; tube with a short ridge-like collar whose sides project very slightly, thence the sides converging evenly to apex as illustrated for the male (fig. 3). *Sternite viii is conspicuously longer than its tergite*, as described by the writer in *Haplorthrips nigricornis* (Bagnall) (J. ent. Soc. S. Afr. vol. 18 p. 211, 1955); in three ♀ ♀ measured tergite viii is 92—90 μ long as against 134 to 155 μ for length of sternite viii.

Abdominal setae: as measured on the holotype: two pairs of sigmoids on ii—vii, the anterior pair much smaller on each of the tergites, the posterior pair measuring 42—51 μ on ii and vii, and 64—68 μ on iii—vi, all pointed; tergite i with one pair of expanded setae at hind angles, 42 μ long; S.2 expanded, similar to pronotals, increasing in length caudad from 82 on ii to 101 μ on vii; S.3 knobbed on ii, 34 μ long, increasing in length caudad on iii to vii, all expanded, 51—82 μ ; S.4 on iii—vi knobbed, 30—42 μ , on vii pointed, 32—34 μ ; on tergite ii the postero-angular S.4 is not developed; on tergite viii: S.1 expanded about 68 long, S.2 also expanded about 93 μ long; sternites ii—vii each bear a median transverse row of small pointed setae 15—17 μ long, 7 on ii and 14—16 on iii to vii; near posterior margin four setae on ii to vii, the inner pair pointed, increasing in length caudad from 42 to 64 μ , the outer pair pointed, 21—25 μ long on ii to iv, blunt to knobbed on v—vii, 30—42 μ long; on viii the sternite itself bears a median row of 10 setae, 17 μ long, on hind margin an inner pair, pointed or blunt 93 μ , and an outer pair, knobbed, 64—68 μ long; the prolongation of sternite viii bears a pair of pointed setae, about 25 μ long in the middle near its anterior margin. On tergite ix the major setae S.1 and S.2 are blunt at the apex with transparent tips, but when seen in bright field illumination they could be taken to be pointed, while S.3 is pointed; the apical tube setae all pointed.

Pores on tergites: the median plate of i has two pores near hind margin but no small setae; tergites ii—vii generally have two dorsal pores between two setae: one small seta at the left and another at the right, all in one row; on viii two pores with about four small setae caudad of them, on ix two widely separated pores with two to three setae between them. The interval between the two pores in iii has been measured on 16 ♀♀ with the following results: the intervals ranged from 25 to 47 μ : intervals of 38 μ were found on 5 ♀♀, 32 and 34 were found on 3 ♀♀ each, 30 μ occurred on 2 ♀♀, while 25, 27 and 47 μ were each found on one female only. On these 16 ♀♀ tergites i and iii have 2 pores in all cases, whereas tergite ii has 2 pores on 11 ♀♀ and one pore only on 5 ♀♀.

Measurements of holotype (macropterous female No. B. 427—24, NaOH-treated, wings mounted separately), in μ , followed in parentheses by the ranges of this plus two paratype females, also NaOH-treated, and macropterous: Length (distended) 1980(1860—); head L. 226(190—257), W. across eyes

EXPLANATIONS OF FIGURES

Hoplandrothrips acaciae spec. nov.

Fig. 1—♀, paratype, head and prothorax

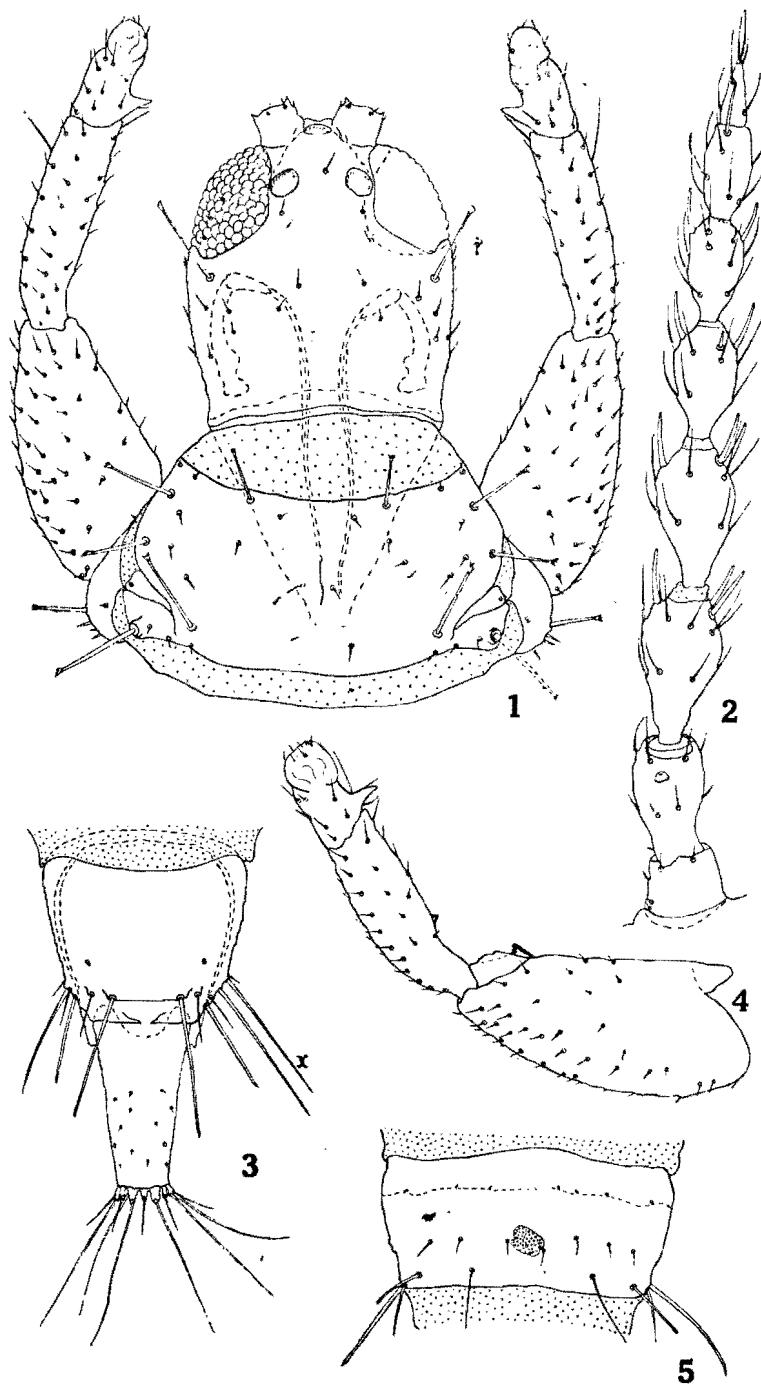
2—♀, paratype, right antenna.

3—♂, paratype, tip of abdomen, dorsal aspect; x: an additional seta not usually present.

4—♂, paratype, left fore leg.

5—♂, paratype, sternite viii of abdomen.

Figs. 1—5: Mrs. M. J. Meyer del. (Projection apparatus)



186(178—199), least W. near base 169(162—179), greatest W. across cheeks 197(190—212), W. on basal collar 169(165—183); eyes, dorsal L. 91(74—101), W. 59(57—64), interval 68(64—72), ventral L. 80(74—), W. 57(—65), interval 72(64—); lateral eye diameter 89(80—93); ocelli, anterior-posterior 25(21—30), interval of posterior pair 30(30), diameters longit./transv. anterior 11(9—13)/25(21—), posterior 25(21—)/21(19—); head setae: postoculars 64—68(—80), their interval 157 (144—169), distance from eyes 13(—17), inter-ocellars 6(6), post-ocellars 17(13—), ventrally: anterior near antennae 30(25—), interval 36(34—), at angles of eyes 25(21—), interval 59(55—), near labrum 38(—42), interval 30(23—), distance from labrum 51(38—); cheek setae 9(6—11); mouth-cone L. from posterior dorsal margin of head 134(—162); palpi: L./W. maxillary segment i: 9(8—)/9(—11), ii: 34(30—38)/9(9), terminal setae 42(30—); labial segment ii: 17(14—19)/6(—8), terminal setae 17(9—), terminal peg-like (?) sensory organ 9(—11)/2(1—); pronotum L. 127(113—148), W. including coxae 331(310—381), setae: am. 34(—42), aa. 57(47—64), ml. 47(42—53), cx. 36(34—49), ep. 59(—80), pm. 66(61—76), pmm. 17(13—); mesothorax W. 317(310—395), setae at extremities of mesonotum ?(38—47); metathorax W. 317(313—391), pair of setae on metanotum 38(—49); fore-wing L. 785(762—877), W. across scale 89(68—), greatest W. near first cilia 85(85), least W. near middle 59(57—68), W. near first duplicated cilia 76(74—91), fringe L. anterior 303(—324) posterior 353(331—360), sub-basal setae a: 38(—64), b: 59(—64), c: 70 (61—80), intervals a—b: 42(34—), b—c 42(—55); legs L./W. ff. 205 (186—226)/93(78—110), ft. 155(134—169)/42(—51), fta. 74(64—78)/34(32—38), its tooth 17(13—21)/9(—13); hf. 212(197—247)/55(—59), ht. 197(176—222)/38(—44), its sub-apical seta 42(—47), hta. 85(—92)/30 (—34); abdomen L. 1323(1169—), W. 331(320—395), median plate tergite i: L. 89(78—106), W. 127(109—148), tube (segment x only) L. 137(131—141), W. at base 72(68—80), at apex 38(—44); setae on tergite ix, S.1: 103(—114), S.2: 110(—114), S.3: 110(97—); terminal tube setae: median dorsal 27(—32), short laterals 42(32—38) long setae 123(112—), ventral carrot-shaped pair 17(13—).

Antennae: total L. 400(385—440).

Segm.	L.	W.	Segm.	L.	W.
i (exposed part)	30(—42)	, 36(34—)	; v . . .	55(47—59)	, 32(—34).
ii . . .	47(44—51)	, 34(—36)	; vi . . .	51(47—)	, 25(—27).
iii . . .	59(—72)	, 38(34—44);	vii . . .	47(42—)	, 23(—25).
iv . . .	61(59—68)	, 38(—42)	; viii . .	30(27—)	, 13(13).

Male (macropterous). Length (distended) about 1.7—2.1 mm. Very similar to female in colour and structure with the following exceptions: the fore tibiae of the male are paler, almost wholly yellow, and the antennae are very slightly paler.

The length of the fore femora on the 11 ♂♂ before me ranges from 176 to 226 μ with a very gradual intergradation, the biggest difference being

11 μ between the two longest femora. The ♂♂ with fore femora 176—200 μ long could be regarded as gynaecoid, and those with femora 203—226 μ long as oedymerous, but there is no sharp distinction between the groups. The fore femora of the three females measured range from 186 to 227 μ in length, therefore there is no striking difference between the sexes in size of fore femur. The three males whose measurements are given in the paragraph "measurements" below were selected because they have the shortest, the longest and intermediate fore femora.

The cheeks are smoother than in the female, and the sides of the ventral aspect of the head are usually tuberculate only close to the eyes, about as far back as the level of the postoculars.

The aa. setae of the pronotum measured on 13 ♂♂ range in length from 68—89 μ as against 47—64 μ in 3 ♀♀. Seta S.2 of tergite ix measured on 13 ♂♂ ranges from 55 to 80 μ in length as against 108—114 for 4 ♀♀. Setae S.1 and S.2 on tergite ix of the male shaped at apex as those of the female. The ratio length of head over length of pronotum in 4 ♂♂ is 1.4—1.6 as against 1.7—1.8 for 3 ♀♀.

Sternite viii bears a glandular area of irregular shape in the middle, as illustrated, about 13 μ long and 17 μ wide: this area is perhaps not quite as conspicuous as the drawing (fig. 5) would suggest, because the rest of the sternite is also granulate, but the minute circular (?) openings are much more transparent in the gland area and I am therefore quite satisfied that it represents a male organ with some sexual function.

Measurements of allotype (macropterous male, No. B. 427—2, oedymerous, NaOH-treated) in μ , followed in parentheses by the ranges of this plus two paratype males, one maximum oedymerous, the other gynaecoid, both NaOH-treated and macropterous: Length (distended) 1800(1740—2070); head L. 190 (186—212), W. across eyes 169(—186), least W. at base 157(169—), greatest W. across cheeks 176(—193), W. on basal collar 157(155—172); eyes, dorsal L. 76(72—80), W. 51—55(—59), interval 63(—68), ventral L. 72(—80), W. 51—55(—59), interval 63(—68); lateral eye diameter 80(78—85); ocelli, anterior-posterior 17(—21), interval of posterior pair 30(27—), diameters longit./transv. anterior 9(9)/21(—25), posterior 21(—25)/21 (17—); head setae: post-oculars 76—80(72—), their interval 140(—154), distance from eyes 9(—13), post-ocellar 9(—17), ventrally: anterior near antennae 34(19—), interval 30(32—34), at angles of eyes 21(—30), interval 51(—57), near labrum 38(25—42), interval 23(21—38), distance from labrum 47(34—51); cheek setae 13; mouth-cone L. from posterior dorsal margin of head 155(141—162); palpi L./W. maxillary segment i: 5(—9)/6(—9, ii 30(23—38)/8(6—9), terminal setae 33(21—34); labial segment ii: 14(13—17)/6(—9), terminal setae 14(13—), terminal peg-like (?) sensory organ 8(6—)/1(1); pronotum L. 120(115—148), W. including coxae 317 (303—374), setae: am. 36(—47), aa. 85(72—), ml. 59(53—), cx. 44(42—49), ep. 68(59—), pm. 72(70—76); mesothorax W. 331(320—381), setae at extremities of mesonotum 38(36—42); metathorax W. 324(317—367),

pair of setae on metanotum 47(42—), interval 68(66—91), distance from anterior margin 32(—38); fore-wing L. 739(677—823), W. across scale 85(72), greatest W. near first cilia 76(—89), least W. near middle 59(55—), W. near first duplicated cilia 72(55—), fringe L. anterior 282(264—), posterior 331(296—), sub-basal setae a: 51(—55), b. 59(55—68), c. 59(55—72), intervals a—b: 38(34—), b—c: 42(40—49); legs L./W. ff. 205(176—226)/85(—110), its ventral apical tooth 9(—13)/9(—13); ft. 134(127—141)/42(—51); fta. 71(—85)/30(—38), its tooth 19(13—21)/13(13); hf. 212(190—)/49(—51); ht. 183(176—190)/38(—42), its sub-apical seta 42(38—)/? (2); hta. 81(72—85)/27(—30); abdomen L. 1185(1110—1320), W. 313(303—360), median plate tergite i: L. 78(71—92), W. 114(106—155), tube (segment x only) L. 116(114—127), W. at base 72(68—), at apex 34(—38), setae on tergite ix, S.1: 106(97—), S.2: 64(61—), S.3: 121(110—123); terminal tube setae: median dorsal 34(30—), short laterals 30(—38), long setae ?(112—114), carrot-shaped ventral pair 17(15—21).

Antennae: total L. 367(358—408).

Segm.	L.	W.	Segm.	L.	W.
i (exposed part)	23(—30)	, 34(34)	v . . .	49(47—55),	30(27—).
ii	42(42)	, 30(—32)	vi . . .	44(42—51),	25(23—).
iii	59(53—64),	36(34—38);	vii . .	40(—42),	21(21) .
iv	55(53—64),	36(—38)	viii . .	25(—30)	, 13(13) .

Material studied: 24 ♀ ♀ and 11 ♂ ♂ collected by Dr. E. K. Hartwig on *Acacia detinens* Burch. at Postmasburg in the Northern Cape Province on 16th April 1949.

The new species is most closely related, amongst its South African congeners, to *H. landolphiae* Jac.-Guill. 1939 but differs from it as follows: (1) ♀ with cheeks and lateral ventral aspect of head distinctly tuberculate; (2) cheek spines of ♀ weaker; (3) ♂ am. setae of pronotum about 27—47 μ long as against about 17—21 in *landolphiae*; (4) third wing-base seta of ♂ expanded, not pointed; (5) S.2 of tergite ix of ♂ 55—80 μ , long, blunt, with transparent tip, not 34—44 μ long, pointed and spine-like; (6) third and fourth antennal segments darker in colour; and (7) margins of eyes and cheeks almost forming a continuous line, not with distinct notches at edges of eyes as in *landolphiae*. *H. landolphiae* has a glandular area on sternite viii very similar to that herein described and figured for *acaciae* spec. nov., although this is not mentioned in the original description.

The North American *H. funebris* Hood 1912 is very similar to *acaciae* spec. nov. and has the ventral lateral parts of the head more distinctly tuberculate, but differs strongly in having the lateral margins of the head prominently notched at edges of eyes. *H. proximus* Hood 1927, also from the United States of America, agrees with *acaciae* spec. nov. in having the head tuberculate at sides, below, but differs in having: (1) third wing-base seta pointed in ♀, (2) antennal segments iii and iv about 104 and 89 μ long, and (3) lateral margins of head distinctly notched at edges of eyes.

I am greatly indebted to Prof. Dr. H. Priesner for copies of his manuscript keys for the identification of the world species of *Hoplandrothrips*, and I also thank him and the following other colleagues for named specimens of species of this genus received from them at various times: Dr. E. K. Hartwig, Prof. Dr. J. D. Hood, and Mr. C. F. Jacot-Guillarmod.

Lathrobiothrips judithae spec. nov. (Figs. 6—10)

Female (brachypterous). Length (distended) about 2.2—2.9 mm. *Colour*: *head* brownish yellow, thorax and abdomen brown, tube orange, legs brownish yellow but paler than head; head largely brownish yellow but often darker, pale brown, between ocelli and in front of them as far as base of antennae, edge of cheeks and basal collar also pale brown; eyes so deep red as to appear black; ocellar crescents deep red; *antennae*: i yellow, ii yellowish grey, iii yellow, to greyish yellow, with a dark grey band, darkest on outer side, below, at basal one-fourth, and shaded with dark grey in distal one-fourth, the base and the middle parts palest, iv pale greyish brown, slightly paler at middle, v slightly darker than iv and also somewhat paler on pedicel and near middle, vi—viii darkest, pale brown, vi and vii with pedicels yellowish brown; mouth-cone pale yellowish brown, labrum black at apex, palpi pale brown; *pronotum* light brown on disc, darker brown at anterior angles, on sides and on hind margin; *pterothorax* light brown dorsally, hind margin of mesonotum with a broad darker brown transverse line, and anterior margin of metanotum with a narrower dark line, sides of pterothorax dark brown; *abdomen*: i light brown, ii—v brown with an orange to reddish tinge, paler in one fourth anteriorly on each side, darker in the median two-fourths, with a more or less distinct paler, yellowish brown longitudinal stripe separating the median darker area from the paler sides, this pale stripe forming more or less conspicuous pale spots cephalad of antecostal line on segments ii to vi; hind margins of ii—v darker than rest of tergites; antecostal lines black and conspicuous on iii to viii; segments vi and vii similar to ii to v, but darker, blackish brown in the darker parts; viii dark to blackish brown anteriorly and at sides, posterior half of median area reddish brown; ix reddish to orange brown, darker brown at sides; tube a bright reddish orange, yellowish at tip above, basal collar black at sides; *legs*: coxae brownish yellow, concolorous with head, rest of legs brownish yellow, paler than head, tarsal cups grey; *major setae* on antennae yellow, postoculars and pronotals darker, greyish yellow to grey, lateral abdominals, all on ix and all at apex of tube yellow to greyish yellow, metanotals and S.1 and 2 on tergites ii to viii mainly brown; *internal pigment* brown to black, not red in any one of the 10 ♀♀ mounted in Canada balsam without NaOH-treatment.

Sculpturing: integument minutely granulate; head rugose, but not deeply so, between the eyes and with less conspicuous transverse ridges between eyes and postoculars; behind line of postoculars and on cheeks the head is reticulate, there being about 12 to 15 transverse anastomosing lines that form mainly

transversely elongate reticles; cheeks minutely serrate; ventrally the lines continue from cheeks mesad for about one-eighth of head width on each side, rest of ventral surface largely smooth but slightly rugose near eyes and antennae; *pronotum* with feint lines only on central parts of disc but distinctly roughened and with semicircular lines in anterior corners near am., aa. and ml. setae, and with rather prominent transverse anastomosing lines in posterior one-fourth and on epimeral sclerites; mesonotum sub-reticulate, with transverse anastomosing lines forming elongate transverse reticles; the large oblong more heavily sclerotized plate of the metanotum with quadrate reticles; *abdomen*: median plate of tergite i and anterior half of tergite ii feebly reticulate ii feebly roughened in median area in front of the dorsal pores; tergites iii to viii roughened on their median two-fourths, between antecostal line and the two dorsal pores, this rough area becoming increasingly rough caudad, its surface sub-reticulate and coarsely granulate, and it occupies about two-thirds of the length of each tergite between antecostal line and hind margin; on iii and iv the lateral one-fourths are almost smooth, but on v—viii they become rough, as rough as the median rough areas; ix rough and reticulate laterad of the two pores, smooth between them but with a narrow band of reticulation near anterior margin; sternites iv—ix also roughened in lateral one-fourths, more distinctly rugose than the tergites; tube with about seven prominent longitudinal dorsal ridges in basal one-third to one-half, feebly reticulate dorsally and ventrally; first antennal segment rugose dorsally, other segments, as well as the femora and tibiae, with fine transverse lines which are not shown on the drawings; all coxae with rather prominent lines.

Head about 1.1 as long as its greatest width, which is across the cheeks, 1.4—1.6 as long as the pronotum, and about 1.0—1.1 as long as the tube; cheeks practically parallel, or very gently rounded, scarcely constricted at base; head cylindrical; eyes large, occupying about 0.3 of head length, closely and rather coarsely faceted, most of the facets of about equal size, except one or two at outer side of posterior angle, but these rather difficult to see in dorsal aspect; about 10—12 facets on lateral and mainly on ventral aspect of each eye are yellow in colour, even after NaOH treatment, whereas the rest of the facets are transparent; eyes bear a few scattered small setae; eyes not protruding, their edges forming a continuous line with the cheeks; eyes kidney shaped in lateral aspect as illustrated (fig. 8); seen from above their inner posterior ends are much narrower than the dorsal parts, but the dorsal and ventral lengths are approximately equal; ocelli small, situated between the eyes on a very slightly elevated flat hump, the anterior ocellus directed slightly cephalad.

Head setae: postoculars blunt or spatulate with transparent tips, situated rather far from the eyes and far apart, near edges of cheeks; ocellars, cheek setae and dorsal head setae small, pointed; ventrally the pair near bases of antennae are short, 27—42 μ , the pair at posterior inner angles of eyes about 50—60 μ , and the basal pair, about 60 μ from base of mouth-cone very long, finely

pointed up to $134\ \mu$ in length; ventrally between eyes about four pairs, and on rest of head about six to eight other pairs of small setae.

Mouth-cone extending about two-thirds across prosternum, heavy, broadly rounded at apex; a transverse row of six fine setae about 30 — $35\ \mu$ long across mouth-cone about midway between base and insertion of maxillary palpi, and 3 or 4 additional pairs on labrum which is bluntly pointed; labium with a fringe of 8 long fine setae, up to $70\ \mu$ long and about $9\ \mu$ apart; labial palpi each bear two rather thick apical setiform appendages, one short and the other about as long as the second segment of the palpus; maxillary stylets rather broad, strap-like, extending to near eyes in retracted position, thence running far apart, in a broad V to mouth-cone, without a maxillary bridge.

Antennae as illustrated (fig. 10); segments vii and viii closely united, but the suture separating them clearly visible above and below, the apex of vii projecting dorsally well over the ventral side of the base of viii; the sense cones of an unusual form, distinctly curved inward and downward, especially on iii to v; the formula: iii, 1—1; iv, 1—1; v, 1—1(+1); vi, 1—0(+1); vii, 1d.; the cones on iii to vi measure about 24 — $37\ \mu$ in length by about $4\ \mu$ in width; areola on ii situated about two-thirds of its length from the base.

Pronotum 0.6 — 0.7 as long as the head, and 0.4 — 0.5 as long as the width of prothorax including coxae; setae: am. short, pointed, about one-fourth to one-half as long as aa.; the others all well developed, spatulate, with transparent tips which are sometimes twice as wide as the stem near them; pmm. short, pointed; ep. usually longest, ml. rarely about as long as ep., all pronotals somewhat variable in length, often strongly curved, difficult to measure; anterior margin of pronotum not thickened, median apodeme not developed. *Mesonotum* bears two pairs of pores near anterior margin; the pair of setae in lateral extremities variable in length, sometimes thick and spatulate or blunt, again thin and pointed, 16 — $30\ \mu$; two pairs of setae on hind margin, the inner pair longer. *Metanotum* with one or two short, curved, pointed setae close together near anterior angles; two prominent, large spatulate setae on the disc, about 26 — $42\ \mu$ from anterior margin and about 113 to $134\ \mu$ apart, their length 49 — $78\ \mu$ an 6 ♀ ♀; the metanotum is strongly transverse, total L. on holotype (and 5 paratypes) 130 (122 — 158), W. 338 (289)— μ .

Wings: all the females before me are brachypterous, the longest wing only about $180\ \mu$ long; one to three sub-basal setae present, blunt or spatulate. *Legs*: fore femora only moderately enlarged, fore tarsi with a short, blunt tooth near apex, its L./W. on holotype (and five paratypes) $11(9$ — $12)$ — $11(—15)\ \mu$; ventrally near base each femur bears a long finely pointed seta, measured on holotype: L. of seta/distance from base of femur ff.: $114/34$, hf. $110/38$; fore tibia bears one fine seta ventrally (= posteriorly) near apex; middle tibia on outer side near apex with one prominent spatulate seta and a finely pointed one in front of it; hind tibia with two short spine-like spurs about 29 — $38\ \mu$ long about $30\ \mu$ from apex, posteriorly, and about $55\ \mu$ from apex one spatulate seta about $60\ \mu$ long on outer side.

Abdomen: rather broad and heavy, sometimes carried curled up over the thorax as by certain species of *Bolothrips* Priesner. Median plate of tergite i more or less dome-shaped, or helmet-shaped, with the posterior lateral angles drawn out into more or less prominent points, but very variable in the females before me, with the posterior margin and/or sides irregularly broken, or humped, the sclerite probably of no diagnostic value owing to its variability. Sternites ii—vii project cephalad beyond the anterior margins of their tergites, as in *Gastrothrips* Hood. Sternite viii projects caudad beyond dorsal posterior margin of its tergite, on holotype L. tergite viii: 141, sternite viii: 193 μ . Lengths of tergites measured on holotype, ii—ix, length: 92, 92, 102, 106, 120, 134, 141 and 106 μ respectively.

Tube heavy, about 0.9—1.0 as long as the head and 1.7—2.0 as long as its own width at basal collar; sides parallel or slightly diverging in basal one-eighth, thence almost straight, converging evenly to apex, where there is a slight constriction in distal one-eighth; a few scattered minute setae on tube, apical setae short, pointed.

Abdominal setae measured on holotype and 5 paratypes: sigmoids not present; S.1, which is presumably homologous with the usual large sigmoid on hind margins of tergites, is straight or slightly bent mesad and usually stands with the tip pointing caudo-mesad, variable in length on ii—vii, L. 40—88 μ , blunt or spatulate, tips transparent; S.2 also variable, not clearly increasing in length caudad, L. on ii—vii: 49—111 μ , tips transparent, spatulate, similar to pronotals; S.3 on iii and iv blunt, 30—52 μ , on v—vii increasing in length caudad, 59—188 μ , transparent and spatulate at apex; on vii, S.4 at posterior angles large, spatulate, 158—191 μ long; on viii the setae S.1, S.2 and S.3 all spatulate, respectively 78—110, 162—184 and 105—130 in length. Setae on ix: the large S.1, S.2 and S.3 narrowly spatulate or blunt and transparent at apex. Terminal tube setae pointed. On *sternites*: median rows of pointed setae 16—33 μ long on ii—viii, on ii only 4—6 setae, on iii—vii there are 9—17 setae; near hind margin on ii—vi there are 4 setae, inner pair longer 28—61 μ long; on vii these are 69—89 μ long, spatulate; viii bears 4 spatulate setae 78—106 μ long on hind margin of disc, and two much shorter pointed ones in middle of its prolongation.

Pores on tergites: dorsal pores are those on the disc of the tergite, about half-way between antecostal line and hind margin, near meson; there are six

EXPLANATIONS OF FIGURES

Lathrobiothrips judithae spec. nov.

Fig. 6 — ♀, paratype, head and prothorax.

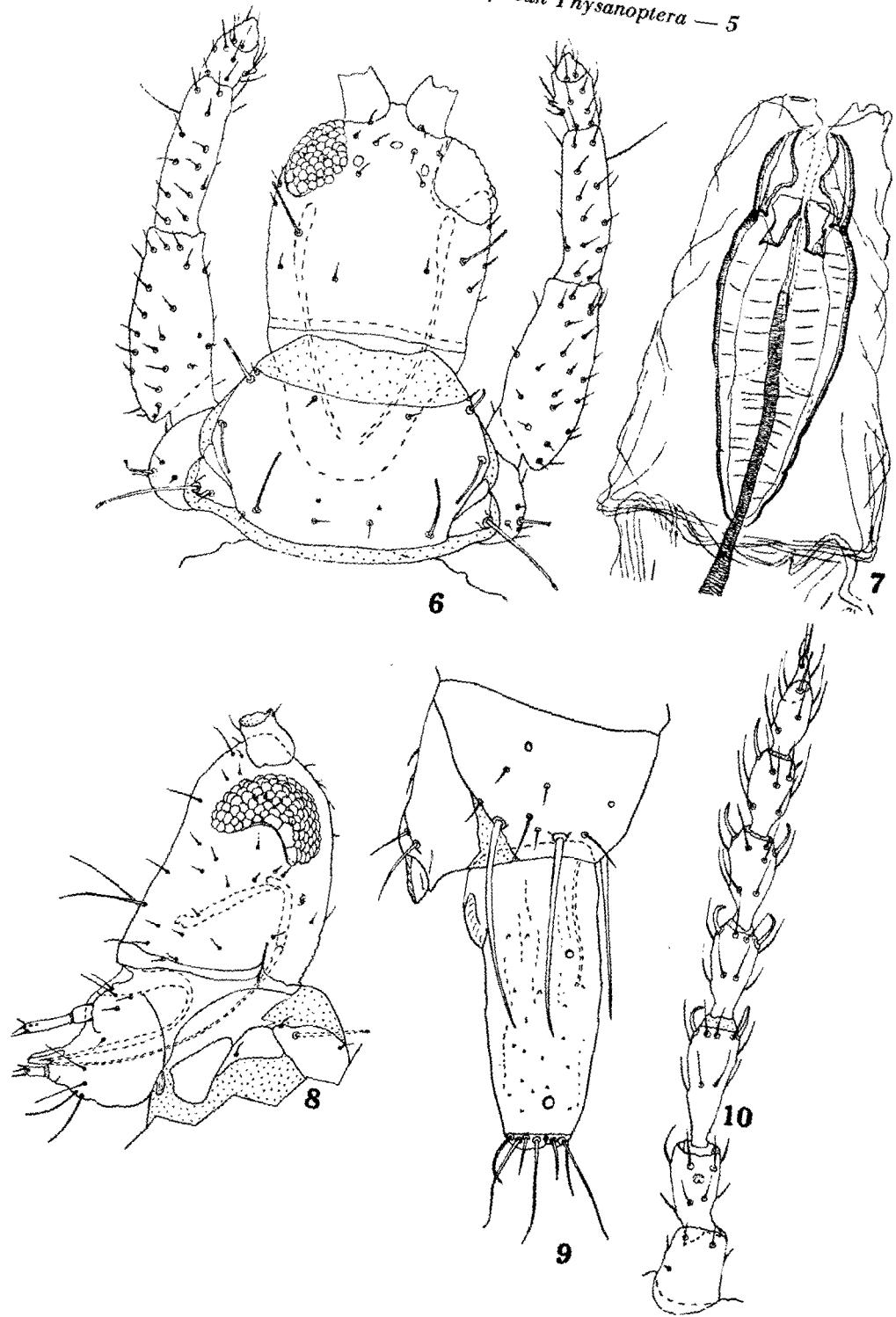
7 — ♂, pseudovirga.

8 — ♂, paratype, lateral view of head.

9 — ♂, paratype, lateral view of tip of abdomen.

10 — ♀, paratype, right antenna.

Fig. 7 : Dr R. zur Strassen del. Figs. 6, 8 — 10 Mrs. M. J. Meyer del. (Projection apparatus)



or eight pores on the antecostal lines of iii—viii; median plate of tergite i has 2 pores near hind margin; dorsal pores: ii—viii each have two pores, on ii about 60μ apart, on iii—vii about 20 — 30μ apart, on viii and ix with intervals of about 35 and about 85μ respectively; rarely only one dorsal pore present on tergite ii; the dorsal pores stand between a pair of small setae, close to them, one at left, one at right, on ii—iv, on ii about 34μ long, on iii and iv only about 17μ long; on v and vi also two setae of about 17μ , and in addition usually a second more widely spaced pair of very small (?) setigerous punctures, as well as a pair of exceedingly minute (?) pores close to the large dorsal pores; these supplementary minute setae and pores also sometimes present on iii and iv; on vii and viii the two small setae close to pores absent, but 2 to 4 very minute setae on a line with pores further laterad, and a pair of long setae behind pores near hind margin, which have been referred to above as S.1 of these tergites; on ix no setae near pores but one on each side in line with them, near lateral margins.

This species feeds on fungus spores, of which large numbers are visible in the alimentary canal in specimens macerated in NaOH.

Measurements of holotype (brachypterous female No. X. 599—3, NaOH-treated) in μ , followed in parentheses by the ranges of this plus five paratype females, all NaOH-treated, including the largest and the smallest females available: Length (distended) 2478(2151—2886); head L. 247(235—280), W. across eyes 223(210—237), least W. near base 225(205—), greatest W. 235(223—250), W. on basal collar 227(203—); eyes: dorsal L. 77(70—87), ventral L. 73(—88), dorsal W. 71(57—76), interval 85(—92), ventral W. 49(—69), interval 105(93—111); ocelli: anterior to posterior 30(28—35), interval of posterior pair 63(57—64), longitudinal/transverse diameter of anterior 7(6—)11(9—), posterior 11(—14)/11(10—13); head setae: postocellars 22(16—27), postoculars 75 and 66(37—79), their interval 181(156—193), distance from eyes 45 and 38(26—55), ventral anterior pair 42(27—), their interval 28(24—34), posterior 134(94—), their interval 55(39—); mouth-cone, length from posterior dorsal margin of head 197(155—), maxillary palpi L/W., segment i: 17(—25)/20(18—24), segment ii: 55(43—56)/12(—16), its terminal setae 22(20—25), labial palpi L/W. segm. ii: 26(24—31)/12(—14), its terminal setae 21(—22); pronotum L. 168(150—199), W. including coxae 414(377—453), setae: am. 20(13—), aa. 63 and 55(35—72), ml. 76(56—124), cx. 44(27—50), ep. 121(105—123), pm. 73 and 68(57—82), pmm. 23(12—25); mesothorax W. 410(357—492), metathorax W. 428(369—434); fore-wing (brachypterous) L. 81 and 73(61—180), sub-basal setae: a. 25(24—50), b. 58 and 54(—74), c. ?(52—68); legs, L/W. ff 223(203—266)/98(86—103), ft. 191(164—211)/53(48—58), fta. 93(88—104)/43(39—52), hf. 284(240—304)/66(62—81), ht. 272(220—306)/47(42—53), hta. 114(99—124)/39(34—43); abdomen L. 1730(1560—1989), W. 526(457—556), tube (segment x only) L. 254(229—292), W. on basal collar 141(120—148), least W. at apex 52(49—60); abdominal setae, tergite ix,

S.1: 172 and 178(158—179), S.2: 192 and 174(—203), S.3: 167 and 178(151—181); at apex of tube, long 97(83—), short 41(33—44).

Antennae: total L. 549(503—616).

Segm.	L.	W.	Segm.	L.	W.
i (whole)	61(56—)	, 53(47—57);	v	80(73—85), 41(38—43)	
ii	73(70—81)	, 41(39—42);	vi	72(61—79), 37(36—41)	
iii	97(84—107)	, 38(37—41);	vii	63(57—67), 30(28—33)	
iv	82(73—89)	, 40(37—43);	viii(dorsally)	25(21—)	, 18(13—19)

Male (brachypterous). Length (distended) 2.0—2.5 mm. Usually somewhat smaller than female, but very similar to it in colour and structure, with the following exceptions: two of the males have some scattered masses of bright red internal pigmentation. For the ratio head L./pronotum L, the 5♂♂ measured gave 1.0—1.4 as compared with 1.4—1.6 for ♀♀; for pronotum L./head L. the ♂♂ gave 0.7—1.0 as against 0.6—0.7 for ♀♀. Although the ratio head L./head W. does not differ between the sexes, the head width in ♂♂ is narrower, greatest W. 197—219 for ♂♂ as against 223—250 for ♀♀.

On the basis of length of fore femur the 15♂♂ before me can be classified into three groups: 8 are maximum oedymerous, with ff. L. 300—340 μ ; 6 are intermediates, with ff. L. 230—271; and one is gynaecoid with ff. L. 197. The gynaecoid is slightly smaller than the smallest female, and the maxima are smaller than the largest females although they have longer fore femora and much larger fore tarsal teeth.

In the oedymerous maxima the anterior margin of the pronotum is slightly thickened internally, and the median dorsal apodeme is distinctly visible in about posterior two-thirds.

The median plate of tergite i of the abdomen is shaped more or less like that of the female in several of the males; in others it is more irregular, and in 3♂♂ it is composed of two parts unequal in area and dissimilar in shape; owing to its variability this sclerite probably has no value as a diagnostic character. Sternite viii of the abdomen is produced caudad only slightly, being about 7 to 20 μ longer than its tergite.

The tube of the male is slightly different from that of the female in some specimens, as seen from above: the slight bulge at about basal one-eighth is more pronounced, and just caudad thereof there is a slight constriction, the sides very gently rounded thence to apical constriction; in other males the tube is practically identical with that of the female; ventral emargination large and conspicuous with thick sides, extending to about 0.43 of length of tube from base; ventrally the tube has a distinct bulge in basal third, as illustrated (fig. 9). There is no glandular area on any of the sternites of the male.

The abdominal setae of the male are very similar to those of the female, but on the males measured they are usually slightly longer, for instance on iii for S.3: 40—67 μ ; on iv for S.2: 81—110, S.3: 61—86 μ ; on v for S.3: 89—115; on vii the S.3 are shorter than on ♀♀, namely 128—145; on viii the S.2 also shorter, 131—146 μ , and S.3 much shorter, only 77—88 μ .

On tergite ix the second large setae, S.2, are long and narrowly spatulate, or blunt in the males, very similar to those of the females, whereas these setae are very often short and spine-like in the ♂♂ of the Tubulifera.

Genitalia. Hartwig has reported (1952, Un. So. Afr. Ent. Mem. vol. 2 pp. 341—499) that males with the genitalia extruded can be obtained by collecting living material into 10 percent alcohol to which fresh grass seeds have been added. I have modified his method by adding 0.1 percent Triton-X emulsifier to the 10 percent alcohol and omitting the grass seeds. The Triton wets the specimens and they sink into the solution at once, instead of swimming about on the surface as they do in 10 percent alcohol without an emulsifier. I am now collecting all my material of both sexes into this solution of weak alcohol. Specimens so collected are very easy to mount and in most cases, at least in the Tubulifera, one can also obtain good mounts of genitalia from such specimens.

The 15 ♂♂ before me were collected into 10 percent alcohol plus Triton and subsequently treated in the usual way. The genitalia of 12 were extruded and distended well enough to mount separately under cover glasses $\frac{1}{4}$ inch in diameter, but only four of these mounts show the phallus in a reasonably flat position.

The basal more or less bulbous part of the phallus is rather coarsely and heavily wrinkled, and bears numerous prominent tubercles, in the shape of very flat cones, whose apices are drawn out into fine short points. The pseudovirga is delicate and easily twisted and broken; it is apparently difficult to make satisfactory mounts of this organ.

There is an internal more or less sclerotized structure, possibly more or less cylindrical, and apparently bilobed, in the pseudovirga, which surrounds and supports the ductus ejaculatorius. There is also an external envelope on the pseudovirga which is thin and fragile, and very finely and indistinctly lined, possibly wrinkled. The accompanying drawing (fig. 7) represents a semi-schematic reconstruction of the approximate structure of the internal and external parts of the pseudovirga. It was drawn after studying all the available slide-mounts of this organ, showing lateral as well as dorso-ventral aspects, and does not represent a drawing of one specimen of the phallus.

The following are the measurements in μ of the genitalia of one of the paratype males of which this organ is mounted in a flat position: length of complete organ from base to apex 416, phallus (including pseudovirga) L. 212 pseudovirga L. 99, W. at base 59, least W. at apex 19 μ .

Measurements of allotype (brachypterous male, No. X. 599—16, NaOH-treated, intermediate oedemerous) in μ , followed in parentheses by the ranges of this plus three paratype males, two maximum-oedemerous, NaOH-treated, and one gynaecoid: Length (distended) 2256(1980—2503); head L. 254 (200—), W. across eyes 197(186—215), least W. near base 191(178—207), greatest W. across cheeks 210(197—219), W. on basal collar 199(178—213); eyes: dorsal L. 81(70—), W. 52(—65), interval 93(76—), ventral L. 69(64—84), W. 45(43—57), interval 103(93—); ocelli: anterior-posterior

37(28—), interval of posterior pair 66(51—), diameters longit./transv. anterior 6(2—)/10(4—13), posterior 10(6—12)/8(6—12); head setae: interocellars 20(16—22), postocellars 17(11—24), postoculars 69(55—97), interval 150 (144—158), distance from eyes 37(25—); cheek setae 13(10—21); ventrally: setae near antennae 41(35—69), interval 32(29—), pair near base 101(97—120), interval 43(37—45); mouth-cone L. from posterior dorsal margin of head 150(—203); pronotum L. 187(148—219), W. including coxae 432 (356—458), setae: am. 15(6—17), aa. 85(49—), ml. 88(55—92), cx. 47 (34—55), ep. 116(89—130), pm. 89(68—126), pmm. 15(11—25); mesothorax W. 400(346—428), its large setae 16(15—28); metathorax W. 419 (341—422), its discal setae 58(47—74); legs L./W. ff. 255(197—347)/93(76—122), ft. 168(141—199)/51(42—57), fta. 79(42—96)/43(34—47), its tooth 24(—53)/26(21—34); hf. 251(212—290)/76(59—77), ht. 239(212—272)/46(38—49); its apical spurs 31(23—38), hta. 101(85—114)/34(32—38); abdomen L. 1511(1320—1681), W. 462(402—), tube (segment x only) L. 205(190—233), W. at base 116(106—123), least W. in apical constriction 49(45—53); setae on tergite ix: S.1: 152(138—154), S.2: 155(138—162), S.3: 156(136—164); terminal tube setae, longest 77(—105), shorter ones 33(31—).

Antennae: total L. 505(446—537).

Segm.	L.	W.	Segm.	L.	W.
i (whole)	58(51—65), 49(42—50);	v	66(64—75), 34(—37)	.	
ii	68(55—69), 36(34—40);	vi	60(55—67), 33(32—38).		
iii	89(76—95), 33(32—37);	vii	53(51—56), 28(25—29).		
iv	71(59—80), 37(34—38);	viii(dorsally)	21(—32) , 18(13—)		.

Material studied: 35 ♀ ♀ and 15 ♂ ♂ all brachypterous, collected by the writer in beating dead plants, about 5 feet high, of the shrub *Aspalathus sarcodes* (Vog.) Walp., near Clovelly Country Club at Fishoek, Cape Peninsula, on 31st March 1955.

This new species differs from the three known species of the genus (*ramuli* Hood 1933, *insignis* Hood 1938, and *woytowskii* Hood 1941) in having only two sense cones on segments iii and iv of the antennae, instead of three and four, respectively. I am not entirely satisfied that it belongs in *Lathrothrips* Hood 1933, because *judithae* spec. nov. differs *inter alia* in the shape of the sense-cones, in sense-cone formula, in the anteriorly produced abdominal sternites, and in having the major setae spatulate or blunt; but it agrees in having segments vii and viii of the antennae closely united, and in the shape and basal ridges of the tube.

L. judithae spec. nov. differs from *Syncerothrips harti* Hood 1935 in (1) epimera of prothorax not fused with the pronotum, (2) shorter postocellars, postoculars, and am. setae, (3) fore tarsus of female toothed, and (4) abdominal sternites produced anteriorly.

The new species agrees with *Gastrothrips* Hood in the produced sternites, but differs in (1) antennal vii and viii very closely united, (2) antennal iv-vi

not with a differentiated, produced area ventrally and (3) only two sense cones on segment iv of the antennae.

The new species agrees with *Barythrips* Hood and Williams 1915 in the structure of the 7th and 8th antennal segments and the grooved tube, but differs in colour of antennal segments, and in having spatulate major setae and abdominal sternites produced cephalad. *L. judithae* spec. nov. also resembles *Acallurothrips* Bagnall 1921 in having a grooved tube, but the two species placed in this genus by Bagnall differ as follows: *A. proturus* Bagnall has the tube parallel-sided in basal two-thirds and then sharply constricted at apex, and it is about 1.4 times as long as the head; the head and legs are also darker in colour than in *judithae*; *A. macrurus* Bagnall has the tube much wider at base, the basal width being about 5.3 times the width in apical constriction, as compared with 2.2—2.7 in *judithae*, its prothoracic setae are much shorter, and it is darker in colour.

I take pleasure in naming this interesting new form for my assistant Mrs. M. J. Meyer, in appreciation of her excellent work as artist and preparator.

Haplothrips callani spec. nov. (Figs. 11—13)

Male (macropterous): Length (distended) about 1.1—1.3 mm. *Colour* brown, with parts of antennae and legs yellow: head brown, slightly darker on cheeks and slightly paler between eyes; eyes so deep red as to appear black; ocellar crescents deep red; antennae: i pale brown, like head between eyes, ii like i, but paler at apex, above, iii and iv yellow, feintly tinged with grey, v and vi pale grey, v a little paler than vi and yellowish at base, vii and viii dark grey; mouth cone: labrum mainly yellow, brown at sides, with a black spot near apex, its apex transparent, sclerotized parts of rest of mouth-cone brown, palpi pale brown; pronotum pale brown on disc, brown at anterior angles, and on hind margin, anterior margins of epimera black; pterothorax: sclerotized parts brown, with black edges especially across hind margin of mesonotum and anterior margin of metanotum; abdomen brown; wings hyaline, with scale on fore-wing pale grey; legs: coxae and femora brown, fore tibiae brown in basal half, distal half largely yellow, middle and hind tibiae brown with distal one-fourth yellow, the brown and yellow parts of all tibiae merging into one another imperceptibly, all tarsi yellow with brown cups; major setae and wing fringes pale, yellow to pale grey, except sigmoids which are dark grey to brown; internal pigment in head, thorax and abdomen bright red.

Sculpturing feeble: integument minutely alveolate-granulate; head roughened on cephalic aspect of ocellar hump below anterior ocellus between eyes; area between ocelli and eyes almost smooth; between eyes and base about twenty anastomosing lines which extend on to ventral surface as far as inner margins of eyes and give cheeks minutely serrate edges; rest of ventral aspect of head smooth; pronotum weakly roughened on disc, with about four lines caudad of pm. setae and a slightly stronger roughness between am., aa. and ml. setae; mesonotum feebly transversely lined but with three

rather prominent ridges on hind margin, this ridged area occupying about four-sixths of width of mesonotum; metanotum largely almost smooth, but with feeble reticulations in median third, and about six prominent lines plus about six reticles in laterocephalic areas from discal setae to antero-lateral angles; lateral parts of metasternum (visible from above) with a few lines, dorsal edge of meta-epimeron prominent and with about eight minute teeth; median plate of tergite i reticulate; tergites ii-ix with feeble transverse lines which form indistinct reticles, the sculpturing more prominent laterad of sigmoid setae, where the surface is somewhat rough, and a few of the lines are minutely asperate on iii-vii; tube with about eight scalloped lines in basal half; sternites practically smooth except viii and ix which are feebly reticulate; coxae, femora, tibiae and antennae with feeble lines which are not shown on the drawings; wing fringes smooth.

Size: the four males before me can be classified as follows on the basis of the length of the fore femur: L. 148: 1 ♂ maximum oedymerous, L. 134—136: 2 ♂♂ intermediates, and L. 108: 1 ♂ gynaecoid. The gynaecoid is smaller than the smallest female, and the maximum is smaller than the largest female.

Head 1.3 times as long as wide, 1.4—1.7 times as long as pronotum, and 1.9—2.0 as long as the tube; the greatest width is at the middle of the cheeks, which are very gently rounded from eyes to base and very slightly constricted just in front of basal collar; head cylindrical; *eyes* large, about one-third as long as head, bulging slightly, coarsely but closely faceted, their dorsal length about 8μ greater than ventral length, all facets of about the same colour after NaOH-treatment.

Ocelli on a conical hump, anterior directed forward, situated just in front of a line through anterior margin of eyes, posterior pair near a line through anterior third of eyes. *Head setae*: postoculars short, expanded at apex, widely separated, about 16μ from eyes; no setae between ocelli, but a minute pair in front of posterior ocelli, and two small pairs directly behind them; other dorsal and cheek setae minute; ventral head setae short, inconspicuous,

Mouth-cone short, extending about half-way across prosternum, broadly rounded at apex, labrum with a broadly rounded transparent tip extending to posterior edge of labium; one pair of setae on labium at apex about as long as maxillary palpi; maxillary stylets, in fully retracted position, do not extend cephalad as far as postoculars; they form a broad V but are connected near hind margin of head by a maxillary bridge, about 59 — 64μ long, as measured from one maxillary stylet to the other.

Antennae as illustrated (fig. 12); segment iii practically symmetrical, vii and viii broadly joined, but base of viii distinctly narrower than apex of vii; sense cones short, the longest on iv about 13μ in length, the formula: iii, 1—1; iv, 1—1; v, 1—1(+1); vi, 1—1(+1), vii, 1 dorsal.

Pronotum 0.6—0.7 as long as head, and 0.5 as long as width of prothorax including coxae, anterior margin not thickened, median apodeme developed only along about one-fifth to one-third of length of pronotum, epimeral sutures distinct; major setae short, expanded at apex in both sexes, the one pointed am. seta on the female drawn (fig. 11) being the only exception, ep. longest.

Mesonotum bears two expanded setae, one near each extremity, about 17—21 μ long, three pairs of short pointed setae on ridges on posterior margin and two pairs of prominent pores on disc; discal setae of metanotum pointed, only about 13 μ long, about 38 μ apart and about 38 μ from anterior margin. *Wings* present on all specimens before me, narrow, delicate, fore pair distinctly narrowed at the middle, the least width at middle about 16—20 μ less than greatest width near base, and about 8—12 μ less than the width about 80 μ from apex; surface of fore-wings slightly roughened and humped at middle; fringe hairs about 13 μ apart along middle, about 9 towards apex and only 4 μ at apex; duplicated cilia absent; basal setae almost in a straight line, all strongly expanded at apex.

Legs: fore femora enlarged in all three types of males, fore tarsi with a prominent tooth.

Abdomen: median plate of tergite i more or less bell-shaped, about 47 μ long and 72 μ wide at base; tergites ii—iv about 56 μ , v and vi about 64, vii and viii about 59 and ix about 55 μ long; tube very short, only 0.5—0.6 as long as the head, sides parallel in basal sixth, then very slightly constricted, and thereafter converging gently to the apex, where the width is about 0.6 of the width at base; ventral emargination large, thick-walled, extending over about one-fourth of tube length at base.

Abdominal setae, measured on a paratype male: two pairs of sigmoids, pointed, on iii-vii, caudal pairs much larger than cephalic pairs, the caudal pair 34—36 μ on iii and vi, and 40—44 μ on iv and v; tergite i with one pair expanded at posterior angles 24 μ long; S.2 expanded on ii—iv: 34—36 μ , on v—vii increasing slightly caudad 36—52 μ ; S.3 knobbed, on iii: 14 μ , on iv—vi: 24—28 μ ; S.3 on vii pointed, 44—52 μ ; viii has two pairs, expanded, inner 20—32, outer 40—48 μ long; sternites ii—viii with median rows of very short (about 12 μ) setae, 4 on ii and viii, and 9—11 on iii—vii; two pairs of posterior marginals on sternites, inner pair longer, 27—35 μ long on ii—vi, and 42—46 μ on vii and viii. On tergite ix the S.1 setae blunt with transparent tips, S.2 (counting only the large setae) pointed, more or less spine-like, S.3 finely pointed.

Dorsal pores on discs of tergites: median plate of i with two pores in postero-angular lobes; ii—vii with two pores and two microsetae close to them, the setae usually in line with and one at each side of the pair of pores; on viii two pores and two microsetae just behind them on two males, on one male only one pore and two setae, on the fourth male three pores and one seta; on ix two pores about as far apart as S.1, without microsetae.

Genitalia: pseudovirga of a very unusual type, trilobed at apex, as illustrated (fig. 13); genitalia mounted separately in holotype and one paratype, visible within the body in the two other paratypes which have been macerated in NaOH. Measurements in μ of the pseudovirga of the holotype, followed in parentheses by those of one paratype: L. 33 (35), W. of stem 8 (8), W. across two lateral lobes 14(14), L./W. of median apical lobe 5(5)/6(6).

Measurements of holotype (macropterous male, maximum oedemerous, No. X.563—6) in μ , followed in parentheses by the ranges of this plus two paratype males, one intermediate oedemerous, the other gynaecoid, both NaOH-treated and macropterous: Length (distended) 1260(1117—); head L. 158(148—), W. across eyes 112(110—), least W. 106(102—), greatest W. at middle of cheeks 118(118), W. on basal collar 108(104—); eyes dorsal L. 52(48—), ventral L. 44(40—), dorsal W. ?(32—34), interval ?(44—48), ventral W. ?(24—28), interval ?(56—60); ocelli: anterior-posterior 16(16), interval of posterior pair 24(22—), diameters longit./transv. anterior 4(4)/6(6), posterior 8(—10)/6(—8); head setae: postcellars ?(8), postoculars 20(—24), their interval 84(—88), distance from eyes 16(16), ventral anterior pair ?(16), interval ?(16—20), at inner posterior angles of eyes ?(16—20), posterior pair ?(24), interval ?(16—24); mouth-cone, L. from posterior dorsal margin of head 63(—72), palpi, L./W. maxillary segment i: ?(4)/?(8), segment ii: ?(20)/?(6), terminal setae 16, labial ?(6—8)/?(4), terminal setae ?(8—12); pronotum L. 114(90—), W. including coxae 217(189—), setae am. ?(12—18), aa. 20(12—), ml. 16(16), cx. 16(—20), ep. 32 and 36(28—), pm. 24(18—), pmm. ?(4—8); mesothorax W. 199(185—); metathorax W. 185(175—189); fore-wing L. 483(455—), W. across scale 44(42—), at widest near first cilia 52(48—), at middle 32(32), W. 80 μ from apex 44(40—), fringe L. anterior 203(199—), posterior 238(224—), basal setae a. 16(—24), b. 20(16—22), c. 36(26—), intervals a.—b. 18 (16—20), b.—c. 12 and 16(10—); legs L./W. ff. 148(108—)/64(56—), ft. 80(76—84)/34(30—), fta. 44(—48)/26(24—), its tooth 16(8—)/12(8—), hf. 128(126—132)/40(—44), ht. 120(101—)/28(28), its apical spurs 20(18—24), hta. 60(49—)/20(—22); abdomen L. 750(675—765); W. 185(164—), tube (segment x only) L. 84(76—), W. basal collar 44(44), least W. apex 24(—26); setae tergite ix: S.1: 70(68—), S.2: 20(16—), S.3: 88(80—); apical tube setae long 96(92—80), short 24(24).

Antennae: total L. 266(252—280).

Segm.	L.	W.	Segm.	L.	W.
i	16(—20)	, 28(24—)	; v	36(34—)	, 22(20—).
ii	32(32)	, 22(20—24);	vi	34(32—36),	20(16—).
iii	32(—34)	, 22(18—)	vii	36(36)	, 18(16—).
iv	34(32—36),	22(22);	viii	26(24—28),	12(10—).

Female (macropterous) Length (distended) about 1.4—1.5 mm. Colour practically identical with that of male, except that the yellow parts of the tibiae are usually not quite as extensive. Structure identical with that of male,

with the following exceptions: fore femora of female only slightly enlarged, fore tarsal teeth distinctly smaller; sternite viii produced caudad, about 20μ longer than its tergite; abdominal setae slightly longer than in male, S.2 on tergites iii-v about $8-12\mu$ longer, S.3 on vii about $8-16\mu$ longer, posterior pair on sternites vi and vii about 20μ longer; on tergite ix (counting only the large setae) S.2 of female $68-76\mu$, blunt, of male $16-20\mu$, pointed, spine-like; dorsal pores on tergites: on i-vii as in male; on viii two pores and one seta behind each pore in five females, in the two other females two pores and two setae, but the latter in varying positions; on ix all seven females have two pores, plus two setae between and slightly cephalad of them in six females, and only one seta in one female.

Measurements of allotype (macropterous female, No. X.563-3) in μ , followed in parentheses by the ranges of this plus two macropterous paratype females, one of them NaOH-treated: Length (distended) 1500(1380-1530); head L. 170(156-172), W. across eyes 122(118-128), least W. at base 114(-120), greatest W. at middle of cheeks 130(124-132), W. basal collar 116(114-120); eyes dorsal L. ?(52-54), W. ?(38-42) interval ?(40-48), ventral L. ?(48), W. ?(28-32), interval ?(60-64); ocelli anterior-posterior 18(-20), interval of posterior pair 24(-28), diameters longit./transv. anterior 4(4)/8(8), posterior 12(10-)/10(8-); head setae: postocellar ?(8), postocular 20(-22), interval 92(88-96), distance from eye 14(12-); mouth-cone, L. from posterior dorsal margin of head 84 (80-91), palpi, L./W. maxillary segment i: ?(6)/?(8), ii: ?(24)/?(6), terminal setae ?(24-28), labial ?(8)/?(6), terminal setae ?(12-20); pronotum L. 104(100-108), W. including coxae 212(210-231), setae: am. 18(18), aa. 20(12-), ml. 12(-18), ex. 16(-20), ep. 32(-36), pm. 20(-24), pmm. ?(4); mesothorax W. 210(-217), metathorax W. 203(-217); fore-wings L. 518(476-532), W. across scale 48(40-), at widest near first cilia 52(44-), at middle 36(32-), 80μ from apex 44(40-), fringe L. anterior 231(217-245), posterior 245(238-266), basal setae a. 24(20-), b. 16(-24), c. 36(32-38), intervals a-b. 22(10-), b-c. 16(-20); legs L./W. ff. 116(112-132)/48(-52), ft. 92(84-)/32(-34), fta. 48(-52)/24(-28), its tooth 6(-8)/4(4), hf. 144(140-156)/44(-48), ht.

EXPLANATIONS OF FIGURES

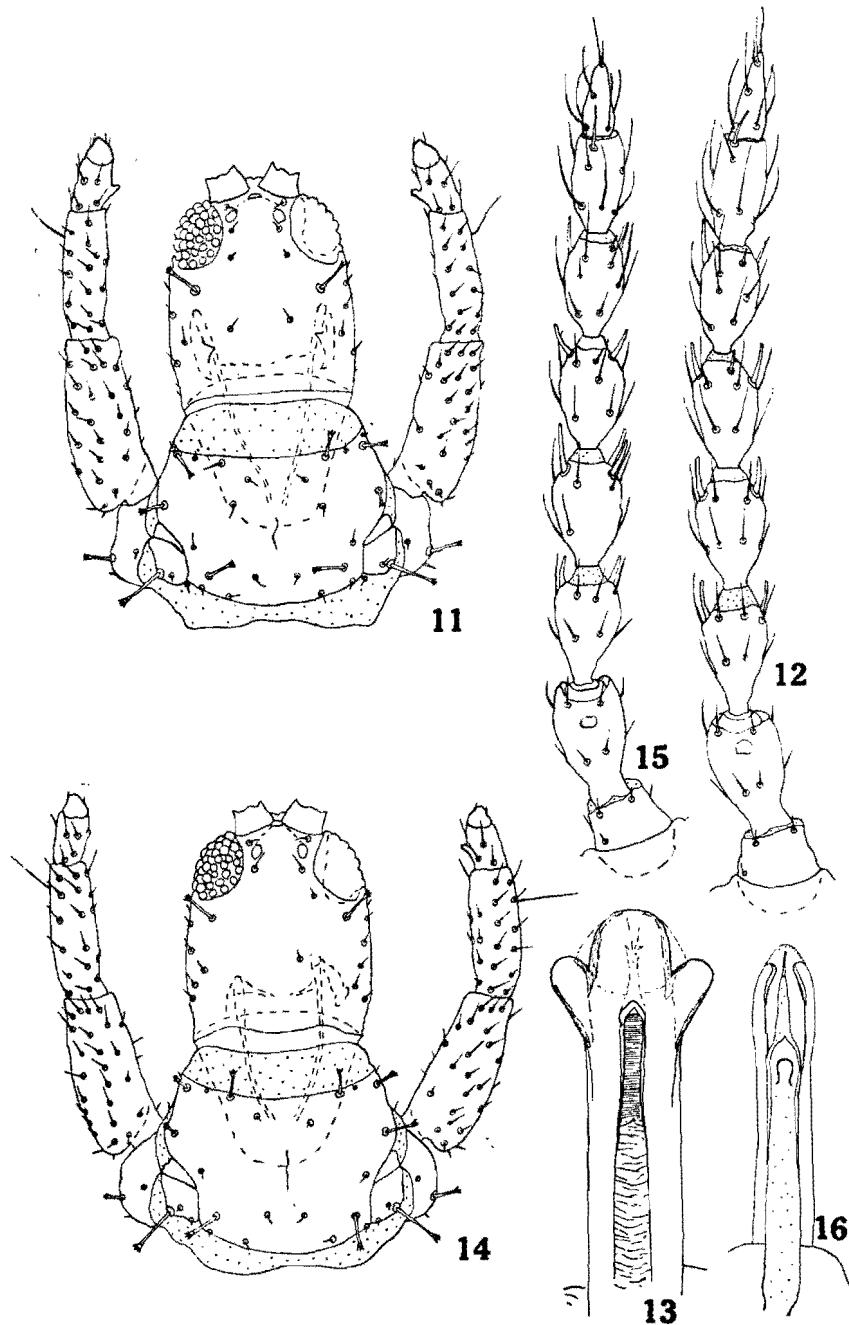
Haplothrips callani spec. nov.

- Fig. 11 — ♀, paratype, head and prothorax.
- 12 — ♀, paratype, right antenna.
- 13 — ♂, holotype, pseudovirga.

Haplothrips minutulus Priesner.

- Fig. 14 — ♀, macropterous, head and prothorax.
- 15 — ♀, macropterous, right antenna.
- 16 — ♂, allotype, brachypterous, pseudovirga.

Fig. 13: Dr. R. zur Strassen del. Figs. 11, 12, 14-16 Mrs. M. J. Meyer del. (Projection apparatus).



120(—128)/30(—32), its apical spurs 22(20—23), hta. 56(—60)/24(22—); abdomen L. 960(—975), W. 238(227—), tube (segment x only) L. 88(84—), W. basal collar 52(48—), least W. apex 28(28); setae tergite ix: S.1: 68(—72), S.2: 68(—76), S.3: 92(88—); apical tube setae long 104(100—), short 32.

Antennae: total L. 280(280).

Segment	L.	W.	Segment	L.	W.
i	20(16—24), 28(—30);		v ,	38(36—), 24(24)	.
ii	32(—36) , 26(24—);		vi	38(36—), 22(20—).	
iii . . .	34(32—) , 22(—24);		vii	36(34—), 20(20)	.
iv . . .	36(36) , 26(24—);		viii	28(28) , 12(10—).	

Material studied: 4 ♂♂ and 7 ♀♀, all macropterous, collected by Mr. A. J. M. Carnegie at Langholm near Grahamstown, Cape Province, in October 1954. The species is predacious on the eggs of the mussel scale *Lepidosaphes beckii* (Newm.) on citrus. The adult thrips apparently crawl under the individual scales to feed on the eggs. Mr. Carnegie observed the thrips quite frequently in a grape fruit orchard heavily infested with mussel scale, but he never found it associated with any other scale; it appeared to be present in the orchard throughout the year.

I take pleasure in naming this interesting new form for Dr. E. McC. Callan, Senior Lecturer in Entomology at Rhodes University, Grahamstown, under whose direction Mr. Carnegie was working when he collected the specimens.

This little species resembles *Haplothrips minutulus* Priesner 1930 rather closely in size and general appearance, but differs from it in having (i) only two sense-cones on segment iv of the antennae, and (ii) the pseudovirga trilobed. Other striking characters of *callani* spec. nov. are the absence of duplicated cilia on the wings, the very short tube, and the expanded major setae.

Priesner has recently restricted the genus *Haplothrips* Serville 1843 to species having four sense-cones on segment iv of the antennae. (Bull. Soc. Fouad Ier. Ent. vol. 33, 1949, pp. 31—157 and vol. 34, 1950 pp. 69—120). But in the 1950 key to the species of *Haplothrips* of Europe and Africa he nevertheless included *H. minutulus* Priesner, although this has only three sense-cones on segment iv.

H. callani spec. nov. does not fit anywhere in Priesner's key to the subgenera and closely related genera (1950). It agrees with *Chiraplothrips* Priesner 1930 in sense-cones on iv, but differs in shape of the fore femur.

Although I realize that the assignment of *callani* to *Haplothrips* may not meet with general approval, I feel that it is best to place it in this genus for the present. I have several other, presumably unnamed, South African species which apparently belong in or near *Haplothrips*, but have less than four sense-cones on the fourth segment, and will therefore not fit into Priesner's system as it stands. It therefore seems desirable to delay further attempts

at subdivision into subgenera, and more exact definition of the characters of *Haplothrips*, at least until some more of the unidentified forms have been worked out in detail

Haplothrips minutulus Priesner (Figs. 14—16)

1930 Bull. Soc. roy. ent. Egypte 1930, pp. 272-273.

Female (macropterous and brachypterous). Length (distended) about 1.0—1.6 mm. *Colour* brown, with parts of legs and antennae yellow; head brown, slightly paler between eyes and ocelli, slightly darker on cheeks at base; eyes so dark red as to appear black; ocellar crescents bright red; antennae: i light brown, ii slightly darker brown but pale at apex above, iii yellow with very faint greyish tinge, iv slightly darker, greyish yellow, v and vi slightly darker than iv, pale grey, vii and viii grey, darker than vi but paler than i and ii; labrum and maxillae mainly yellowish brown, labium brown, palpi pale brown; pronotum, pterothorax and abdomen pale brown to brown, somewhat darker at sides, tergite ix slightly paler, yellowish brown; wings hyaline, scale of fore-wing pale grey; legs: coxae and femora brown, fore and middle tibiae brown to pale brown in basal four-fifths, yellow in distal fifth, hind tibiae yellow in distal fourth, but on all tibiae the brown and yellow parts merge into one another imperceptibly; all tarsi yellow, their cups grey to brown; major setae and wing fringes pale, yellow to pale grey, except sigmoids on abdomen which are grey; internal pigmentation bright red in head, thorax and abdomen.

Sculpturing weak, so similar to the described above in *Haplothrips callani* spec. nov. that there is no need to repeat the description; on thorax and abdomen the sculpturing is generally less distinct than in *callani*; wing fringes smooth.

Head cylindrical, 1.2—1.4 times as long as greatest width, which is across middle of cheeks, 1.5—1.8 as long as pronotum and 1.7—2.0 as long as the tube; eyes and cheeks forming a practically continuous line laterally, cheeks gently rounded, scarcely constricted at base; eyes large, scarcely bulging, coarsely and fairly compactly facetted, about 0.3—0.4 as long as the head, their dorsal length about 4μ greater than ventral length, about four minute setae on dorsal aspect, all facets of approximately the same colour after treatment with NaOH.

Ocelli on a conical hump, the anterior directed forward, the posterior pair latero-dorsad, anterior situated practically on line through anterior margins of eyes, posterior at about one-third of eye length from anterior margin. *Head setae*: postoculars broadly expanded at apex, short, situated far apart and 8—14 μ from the eyes; other head setae minute, pointed.

Mouth-cone short, broadly rounded at apex, extending about half-way across prosternum; labrum broadly rounded at apex, transparent at apex, extending to distal margin of labium; labial palpi minute, labial setae very

finely pointed, about $28\ \mu$ long. Maxillary stylets in completely retracted position do not reach as far as postoculars; they form a broad V and are connected near hind margin of head by a maxillary bridge that is about $55-65\ \mu$ long (as measured from one maxillary stylet to the other); in the female figured (fig. 14) the stylets are partly extruded; in the normal retracted position they resemble those shown on the figure of *H. callani* spec. nov. (fig. 11).

Antennae as illustrated (fig. 15); segment iii slightly asymmetrical, or practically symmetrical, usually less asymmetrical than the antenna shown on figure 15; sense cones short, often only about $11-14\ \mu$ on iii and iv, the longest on iv about $19\ \mu$ long; the formula: iii, 1-1; iv, 1-2; v, 1-1(+1); vi, 1-1(+1); vii, 1 dorsal.

Pronotum 0.6-0.7 as long as the head and 0.5 as long as width of prothorax including coxae; anterior margin not thickened, median apodeme feebly developed on about median one-fifth only, epimeral sutures distinct; major setae all present, all broadly expanded at apex, ep. longest, about $32-36\ \mu$ in length. *Mesonotum* with two expanded setae $16-21\ \mu$ long on hind margin near lateral extremities, two pairs of prominent pores on disc and three pairs of minute pointed setae on ridges at hind margin. *Metanotum*: discal setae about $17-20\ \mu$ long, pointed, $30-32\ \mu$ apart and $36-42\ \mu$ from anterior margin.

Wings fully developed on 22 ♀ ♀ and brachypterous on 5 ♀ ♀ (including the holotype). The fore-wings are narrow and delicate, narrowed at the middle, the least width at middle $4-10\ \mu$ less than width near apex, and $12-20\ \mu$ less than width at widest point near first cilia at base; fore-wings with an elongated slightly roughened hump at middle, fringe hairs spaced about as in *H. callani* spec. nov.; basal setae all expanded at apex, almost in a straight line, the median seta about 3 or $4\ \mu$ behind the line of the other two. *Legs*: Fore femora only slightly enlarged, about as wide as hind femora, fore tarsi with a small tooth towards apex, hind tibiae with a postero-lateral spur (or seta) about $17\ \mu$ long.

Abdomen: median plate of tergite i more or less bell-shaped, its anterior end rounded, length about $55-59$, width at base about $76-80\ \mu$; tergites ii-ix and sternites ii-vii subequal in length, sternite viii decidedly longer than its tergite; tube with sides practically parallel in basal one-seventh, thence converging evenly to apex. *Abdominal setae* measured on a macropterous female: two pairs of sigmoids on ii-vii, posterior pair larger; on ii and vii sigmoids weak, on iii-vi posterior pair about $51-55\ \mu$ long; S.2 subequal, expanded, about $49-59\ \mu$ on ii-vii; S.3 on iii-vi expanded, $25-38\ \mu$ long; on vii the S.3 pointed, $64-72\ \mu$; viii has inner knobbed $42\ \mu$, outer blunt about $59\ \mu$ long, not strongly knobbed or expanded as in *H. callani* spec. nov.; on tergite ix the long and short setae all pointed; inner pair on sternites iii-viii increasing in length caudad about $42-72\ \mu$, finely pointed. *Dorsal pores* on abdominal tergites very similar to those of *H. callani* spec. nov.

Measurements of one female (macropterous, NaOH-treated, No. B. 411-y-5, collected by the writer near Pretoria, 24-iii-1949 on *Pavetta assimilis* Sond.) in μ , followed in parentheses by the ranges of this plus four other females (three macropterous, one brachypterous, two NaOH-treated, three from Pretoria on *Pavetta*, one from Mariepskop on *Syzygium*): Length (distended) 1530(—1560); head L. 160(140—182), W. across eyes 126(116—), least W. near base 120(104—), greatest W. across middle of cheeks 134(120—136), W. on basal collar 120(104—); eyes dorsal L. 56(44—), W. 40(36—), interval 46(44—48), ventral L. 52(40—), W. 30 and 32(28—), interval 64(60—); ocelli anterior-posterior 16(—20), interval of posterior pair 24(—28), diameters longit./transv. anterior 4(—6)/8(8), posterior 10(8—)/8(6—); head setae: postocellars 12(8—), postoculars 24(20—28), their interval 96(84—), distance from eyes 12(8—14), ventral anterior pair 28(20—), interval 24(22—), posterior 64(44—), interval 24(24); cheek setae 8(8); mouth-cone, length from posterior dorsal margin of head 96(68—98), palpi: L./W. maxillary, segment i: 4(—6)/10(8—), segment ii: 28(22—)/8(6—), terminal setae 24(24), labial 8(—10)/4(—6), terminal setae ?(12), labial setae 28(28); pronotum L. 108(92—), W. including coxae 217(189—), setae: am. 20(12—), aa. 24(12—), ml. 20(16—24), cx. 16(12—20), ep. 36(32—), pm. 28(20—), pmm. 8(8); mesothorax W. 217(178—); metathorax W. 213(175—); fore-wings of macropterous ♀ ♀ L. ?(483—555), W. across scale ?(44—46), W. at widest near first cilia ?(48—56), at middle ?(30—40), W. near apex ?(40—44), fringe L. anterior ?(224—238), posterior ?(252—280), basal setae: a. 24(16—), b. 24(16—), c. 32 and 36(24—), intervals a.-b. 18(14—20), b.-c. 16(14—18); legs L./W. ff. 133(112—)/45(44—56), ft. 91(84—98)/35(30—), fta. 50(44—52)/24(21—26), its tooth 2(—3)/2(—4), hf. 154(120—155)/40(36—51), ht. 133(108—134)/32(26—), hta. 63(52—64)/20(—23); abdomen L. 990(—1035), W. 225(203—231), tube (segment x only) L. 92(76—96), W. at base 50(46—), least W. at apex 28(—32); setae tergite ix: S.1: 72(64—80), S.2: 80(68—92), S.3: 72(64—80); terminal tube setae long 108(88—112), short 32(28—).

Antennae: total L. 287(255—).

Segm.	L.	W.	Segm.	L.	W.
i (exposed)	20(16—22), 28(28)	;	v	40(34—)	, 22(—24).
ii	36(32—)	, 26(24—);	vi	40(32—)	, 20(20)
iii	36(30—40), 24(20—);		vii . . .	34(32—36), 20(16—),	
iv	40(34—)	, 26(24—);	viii . . .	28(24—)	, 12(10—).

Male (macropterous and brachypterous). Length (distended) about 1.2 mm. Colour and structure practically identical with those of the female, except that the male is slightly smaller. The two males before me are probably more or less gynaecoid. In am labelling the male taken near Pretoria 24-iii-1949 on *Pavetta assimilis* Sond. as the allotype, since Priesner described the female only in 1930. The allotype has the wings neither typically brachypterous nor macropterous; the fore-wings are about 330 μ long as

against 483—555 μ in macropterous females, but all four wings of this male are rounded off at the tips, indicating that they only developed to this point, and that they have not been broken off there. The paratype male is macropterous but its wings have been partly destroyed by NaOH.

The abdominal setae of the males are slightly shorter than those of the females, for instance on ii-vi the S.2 setae are 13—17 μ shorter. On tergite ix the S.2 setae (counting only the large ones) are 46—67 μ shorter than those of the females, and they are thick and spine-like.

Genitalia of the allotype have been mounted separately and are shown on the drawing (fig. 16); measurements of the pseudovirga: length 38, width at middle 8, greatest width near apex 8 μ .

Measurements of allotype (brachypterous male, No. B. 411-y-10, collected by the writer near Pretoria, 24-iii-1949 on *Pavetta assimilis* Sond.) in μ , followed in parentheses by those of the paratype male, macropterous, NaOH-treated, from Mariepskop: Length (distended) 1215(1185); head L. 162(158), W. across eyes 112(112), least W. near base 96(102), greatest W. across middle of cheeks 112(120), W. basal collar 96(106); eyes dorsal L. 55(55), W. 32(34), interval 48(44), ventral L. 36(42—38), W. 28(30), interval 57(53); ocelli anterior-posterior 18(19), interval of posterior pair 24(23), diameters longit./transv. anterior 6(6)/8(11), posterior 10(13)/6(6); head setae: postocellars ?(13), postoculars 20(27), their interval 86(86), distance from eyes 16 and 12(13 and 15), ventrally: pair near antennae ?(17), interval ?(19), at inner posterior angles of eyes ?(21) interval ?(42), pair near base ?(30), interval ?(15), distance from labrum ?(25); cheek setae 6(6); mouth-cone L. from posterior dorsal margin of head 48(56), palpi L./W. maxillary segment i: ?(4/6), segment ii: ?(25/4), terminal setae ?(25); labial setae ?(17); pronotum L. 92(92), W. including coxae 192(183), setae: am. 16(17), aa. 12(17), ml. 13(17), cx. 17(19), ep. 28(27), pm. 22(21), pmm. 6(?); mesothorax W. 164(169), metathorax W. 165(172), its discal setae 11(13), their interval 21(21), distance from anterior margin 34(36); fore-wing basal setae a. 14(23), b. 16(23), c. 24(34), intervals a.-b. 16(13), b.-c. 12(13); legs L./W. ff. 120(106)/44(49), ft. 80(85)/28(27), fta. 40(49)/20(20), its tooth 2(2)/2(2), hf. 140(130)/44(34), ht. 116(120)/26(26), its apical spur L. 21(21), hta. 50(52)/18(18); abdomen L. 750(769), W. 154(162), tube (segment x only) L. 84(84), W. basal collar 44(44), least W. apex 28(25); setae tergite ix: S.1: 76(?), S.2: 20(25), S.3: 92(89); terminal tube setae long 100(100), short 20(25).

Antennae L. 280(254).

Segm.	L.	W.	Segm.	L.	W.
i (exposed)	26(22), 28(27);		v	36(36), 22(22).	
ii	32(32), 22(22);		vi	36(36), 20(17).	
iii	32(36), 22(22);		vii	32(34), 18(18).	
iv	38(36), 23(23);		viii . . .	24(27), 12(11).	

Material studied: Priesner's holotype, a brachypterous female taken on orange at Buffelspoort, Rustenburg, Transvaal 3-viii-1923, plus 26 ♀ ♀ and 2 ♂ ♂ collected by the writer: Silikaatsnek near Pretoria, Transvaal 24-iii-1949, on the shrub (or small tree) *Pavetta assimilis* Sond. 20 ♀ ♀ macropterus, 4 ♀ ♀ brachypterous and the allotype ♂ (?) brachypterous; Salique Forest Station just below Mariepskop near Acornhoek, Eastern Transvaal, 5-vii-1944 on the "waterboom" *Syzygium cordatum* Hochst. 2 ♀ ♀ and 1 ♂, all macropterus.

As stated above under *Haplothrips callani* spec. nov., *H. minutulus* Priesner is very similar to *callani*, but differs in having quite a different type of pseudovirga, and in having three sense-cones on segment iv of the antennae; another small difference lies in the abdominal setae: S.2 on tergite viii is blunt in both sexes of *minutulus*, and knobbed or expanded in both sexes of *callani*.

Acknowledgments.

I am greatly indebted to Dr. R. zur Strassen for preparing the drawings of figures 7 and 13, and for a great deal of other assistance in the preparation of this paper.